

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
18 March 2004 (18.03.2004)

PCT

(10) International Publication Number  
WO 2004/022906 A1

(51) International Patent Classification<sup>7</sup>: E21B 21/10, 34/14

(21) International Application Number:  
PCT/GB2003/003770

(22) International Filing Date: 29 August 2003 (29.08.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
0220445.1 3 September 2002 (03.09.2002) GB

(71) Applicant and

(72) Inventor: LEE, Paul, Bernard [CA/CA]; 15 Blue Ridge  
Place, Calgary, Alberta T3L 2NS (CA).

(74) Agent: ORR, William, Mclean; Urquhart-Dykes & Lord,  
Tower House, Merrion Way, Leeds LS2 8PA (GB).

(81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

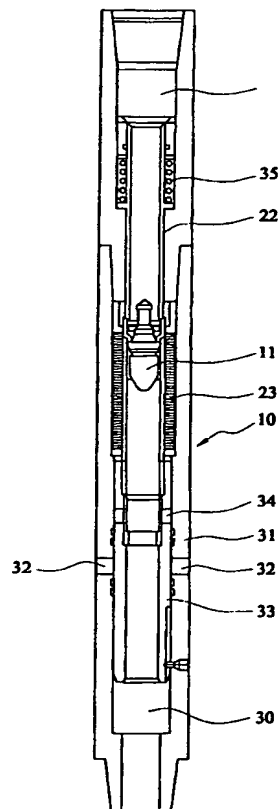
(84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report

[Continued on next page]

(54) Title: DART-OPERATED BIG BORE BY-PASS VALVE



(57) **Abstract:** A by-pass tool (10) has a large bore throughflow passage (30) when in an inactive drilling mode, and the capable of being activated, upon launching of an activation dart (11) from the surface, to an active mode in which drillstring fluids can be diverted to a by-pass port, comprising: a casing (31); a by-pass port (32) for diverting drillstring fluids when the tool is in the active mode; and an axially slidable member (33) within the casing (31) to slide between blocking and release positions with respect to the by-pass port (32), in which the member (33) is movable to the release position by the dart (11) to bring ports (34) in the member (33) into registry with the by-pass port (32), and in which the displaceable member (33) can return to its blocking position and thereby cause the tool to revert to its inactive mode upon wireline retrieval of the dart.

WO 2004/022906 A1